REMARKS

Claims 1-39 are pending, and have been rejected as anticipated or obvious in light of various references, the rejections for which are respectfully traversed for the reasons given below.

In support of the rejections, it is repeatedly stated that while the principle references (Golubic, relating to firearms, Richardson, relating to bows and arrows, and Swensen, relating to bows and arrows) fail to disclose various claim limitations, a host of other prior art references that happen to disclose these features may be combined with the principal references in support of the rejections. As the Examiner reads the fact-based arguments presented below, Applicant requests that the time-honored principle of patent prosecution be kept in mind that it is improper to combine references without a proper teaching or motivation to so combine them. *See, e.g., In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994) (A reference teaches away when a person of ordinary skill would be discouraged from taking the path that was taken by the applicant). Nor has there been any showing of the requisite teaching or motivation to combine references in the manner done in the Office Action. *See, e.g., In re Dembiczak*,175 F.3d 994, 999 (Fed. Cir. 1999) ("Our case law makes clear that the best defense against the subtle but powerful attraction of hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.").

As also shown below, the Examiner also relies on various references, such as Nibecker, Bergstrom, Tann and Adcock, which are nonanalagous art as they deal with actual, not simulated, hunting applications, and therefore do not even address the simulated hunting problems solved by the present invention. *See In re Dillon*, 892 F.2d

1554 (Fed. Cir. 1990), *vacated*, 919 F.3d 688 (prior art not directed to problem solved by invention is nonanalagous art which may not be used to support a rejection).

The Anticipation Rejection Concerning Claims 19, 20-22 and 34

Claims 19, 20-22 and 34 have been rejected as anticipated by Swensen (US 2004/0014010). This rejection is respectfully traversed, as Claim 19 recites: "a momentum suppression rod, a cavity and a piston moveable within the cavity, the piston being capable of providing back-pressure to the bow string upon release of the drawn string commensurate to that which an arrow imparts when actually fired from the bow." Swensen fails to disclose these limitations. Instead, the Swensen rod is used as a contact rod to determine vibration. Swensen (¶¶ 38-39) describes a mechanically-actuated rod for the use in triggering a switch that causes a laser transmitter to emit a pulse. The position and movement of the rod is used to trigger (by physically contacting the switch) an open or closed status of the switch to send signals to the laser transmitter for activation (¶ 38). The Swensen system may include a vibration or wave sensor to trigger a signal for the laser transmitter to activate, eliminating the need for a mechanical switch. This is also in contrast to Claim 21, which recites "mechanical actuation" as a way to limit the movement of the rod itself through friction. With the present invention, the rod passes through a friction pad that applies drag to the rod, thereby slowing its forward motion.

Regarding Claim 22, Swensen discloses pneumatic, not hydraulic, actuation for the rod. The use of hydraulics in this application provides more stability and predictability in the operation of the unit. Additionally, providing the flexibility of both hydraulic and pneumatic operation provides a wider range of operating conditions and provides significantly more variability in the control. Further, the provision of hydraulic

operation is not a trivial design feature, as shown by the present invention, and it would not have been obvious to provide such a feature.

The Obviousness Rejections

Claims 1, 3-5, 7, 8 and 38 in light of Golubic and Richardson

Golubic (USPN 5,026,158) discloses a simulated hunting device and methods therein to determine various factors and results. It is believed that the methods and processes described and claimed in the instant patent application differ substantially from those described in Golubic, as to: (1) the process for sighting and aiming the unit (see also Claim 5); (2) the ability to determine and display flight path; (3) the use of a clinometer (Claim 13); and (4) the ability to edit varying impact point images on the viewer and the use of this with a bow and arrow.

As to Claim 1, it would not have been obvious to someone of ordinary skill to have combined Richardson (2006/0063574 A1)[1] with Golubic. Simply put, Golubic and Richardson would not have been combined due to their inherent incompatibility. Golubic, for example, as is acknowledged, fails to disclose the use of a bow and arrow, and also fails to disclose the display of the flight path of a projectile. Further, with regard to the flight path disclosed in Richardson, a person of ordinary skill would not have combined it with Golubic to arrive at displaying the flight path on the image because the use of such technologies as described cannot be applied in a practical application to solve the same problem. The technology described in Richardson requires that significant equipment be placed in an enclosed environment with care taken as to the level and placement and

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[1] Applicant notes that Richardson was filed in August, 2005, based on a CIP filed in July, 2003. As the instant application was filed in December, 2003, it is entirely possible that the relevant portions of Richardson do not constitute prior art to the instant invention, and by arguing substantively here, Applicant does not intend to waive such argument.

calibration of the equipment. Further to get an animal to stand precisely behind the reader so that a shot could be made, as required by Richardson, would be highly unlikely to happen. Use of the Richardson equipment would also be limited by inclement weather. In addition, the data capture process described in Richardson requires the use of multiple sensors and cameras as disclosed in FIGURE 3 of Richardson. This is not a practical alternative or addition to Golubic's described unit. These observations teach away from a combination of the Golubic and Richardson hunting systems, and would cause someone to be discouraged from attempting to combine such technologies since the actual use of the product described by Golubic requires the user to operate it independently.

As to Claim 3, Golubic fails to disclose the use of both firearms and projectiles, whether for use in archery or for use in other weapons.

As to Claims 4-5 and 7-8, while both the instant patent application and Golubic disclose the ability to edit the image and display the results of the impact to the user, the instant application does so in a very different manner – by enabling the display of the flight path of the virtual arrow, and also demonstrating the possible interplay between the simulated projectile and an object that might be in the calculated flight path. This is believed to be both a significant and patentable difference.

More specifically, as to Claim 5, and its recitation of the "image editing software and the trajectory calculating software enable display of a site zero impact location on the display screen," Golubic discloses the display of an impact point "relative" to the zero-range reticle. In contrast, the present invention displays the site zero impact location (defined by the distance to the target for which that unit is sighted) and is variable with user-input, which differs from the zero-range reticle which Golubic defines as the aiming

or crosshairs (Golubic, col. 2: 1-9) that are preset and non-adjustable. The Golubic zero-range reticle is a pre-set, non-adjustable set of crosshairs used to point the device. The Golubic crosshairs are always in the same spot regardless of distance. The instant site zero impact location is variable based on distances determined through use and calibration by the user and/or factory settings provided. This allows the user to adjust the unit so that the crosshairs or other sighting visual cues more accurately reflect the actual distance to target. For example, if you are sighted at 20 yards and hit dead on target and then use that same setting at 200 yards, the impact location would not even be visible in the display field based on the drop rate of the projectile. This would happen with preset crosshairs as disclosed in Golubic. To compensate for the increased distance, the preferred embodiment of the present invention moves the crosshairs down in the field of view, causing the user to raise the angle of the unit to place the crosshairs on the target. This analysis is further supported by USPN 4,494,198 to Smith (see col. 1:11-20), which teaches that distance and other variables in ammunition and barrel effect the trajectory calculation and that using a non-adjustable reticle, or graticule, is a deficiency in design.

As to Claim 7, Richardson requires that all of the data be collected, processed and displayed from stationary units and not from mobile, self-contained units as with the present invention. Accordingly, a person of ordinary skill in the art would not have combined the stationary units of Richardson (which comprise the image editing software and the trajectory calculating software which enable display on the display screen of images adjacent an intended target, as well as the interplay between such images and the projectile with Golubic to arrive at displaying the flight path on the image. In fact, for the reasons mentioned specifically above, the technologies described in Golubic and

Richardson actively teach away from each other. The problem Golubic is trying to solve deals to an almost exclusive extent with the outdoors and it would be impractical to mount such equipment.

As to Claim 8, the images and editing of the impact point would certainly be more accurately determined by the present invention, as mentioned above in connection with Claim 5.

Claims 18 and 39 in light of Golubic, Richardson and Smith (USPN 4,494,198)

As to Claims 18 and 39, with regard to the recited "pre-shot adjustment" made by "firing an initial, simulated shot, estimating one or more shot parameters based on analysis of the initial, simulated shot and its corresponding flight path, and adjusting one or more of the shot parameters prior to firing of the next simulated shot at the same intended target," it is acknowledged that Golubic fails to disclose the firing of an initial shot, or estimating initial parameters based on such firing, or adjusting such parameters based on such firing (page 8 of Office Action). While Smith is alleged to disclose this based on a gun fire control system, it would not have been obvious to modify Richardson (bow and arrow simulation) with Golubic and Smith (gun firing systems) as the Smith gun firing principles are not applicable to archery because Smith patent addresses actual aiming and firing of ammunition and does not disclose this for use in simulation. Further, the factors that need to be considered for determining shot results for firearms versus archery are considerably different (e.g., arrow fletching weight, type and number, arrow construction, length and weight, etc.).

Claim 17 in light of Golubic, Richardson and McGivern (US 2003/0101604)

As to Claim 17's recitation of a liquid crystal display, it is admitted that Golubic and Richardson fail to disclose such a display (page 9 of Office Action). The purpose of the display, as recited in Claim 1, is for "displaying the image data" concerning the projectile fired. While McGivern discloses such a display, the McGivern display is not used for the purpose recited in Claim 1, but is instead used in viewing the target, not for viewing the image or to display an edited image captured from the data recording device.

Claim 6 in light of Golubic, Richardson and Edwards (USPN 6,871,439)

Claim 6 recites that the "impact point is derived using a predetermined algorithm indicating a change in pixel size given corresponding target distance changes." The Examiner acknowledges that Golubic and Richardson fail to disclose this claimed feature (Page 9 of Office Action), but finds it obvious to derive this feature from Edwards. But Edwards, which relates to firearms and not bows/arrows, is not properly combinable with Golubic and Richardson because Edwards' process involves a receiver placed on the target, so that data may be recorded and processed accordingly. With the present invention, the shot is determined based on input received within the unit itself, and does not require a separate receiving unit. Accordingly, the quite different apparatus of Edwards would not have been combined with Golubic and Richardson to result in the present invention as recited in Claim 6.

Claim 9 in light of Golubic, Richardson and Kendir (US 2005/0153262)

Claim 9 recites that the shot information includes information as to "whether or not the shot was a 'kill' shot." The Examiner acknowledges that Golubic and Richardson fail to disclose this (page 10 of Office Action). Kendir's process involves a receiver placed on the target, which enables data to be recorded and processed accordingly. The

method of the present invention involves determining the shot based on input received within the unit itself and does not require a separate receiving unit. The technology as described by Kendir could not be applied in a simulated environment where live wild animals are being used. The technology requires that the receiver and notification system be part of the target. This would have caused someone looking at this technology to abandon the thought of combining it with Golubic and Richardson. Further, Kendir use a straight line laser beam to determine impact and does not answer the problem of trajectory in where the projectile would actually impact the target, further discouraging someone from combining these patents. Simply put, the teachings of Kendir are not applicable in this invention.

Claims 10 and 12 in light of Golubic, Richardson and LaBelle (USPN 7,053,992)

As to Claims 10 and 12, which recites that the image editing software and the trajectory calculating software provide the user with information concerning target speed at the time of the shot (Claim 10) and the use of a laser range finder (Claim 12), it is acknowledged that Golubic and Richardson fail to disclose these features (see pages 10-11 of the Office Action), but that LaBelle discloses them. While it is alleged that LaBelle discloses these features, LaBelle is not properly combinable with Golubic and Richardson because In fact, LaBelle is nonanalagous art, as it attempts to solve a problem of calibration in the rangefinder itself, does not use target speed and distance to solve the problem delivering and displaying a simulated shot. LaBelle refers to "simulation" only in terms of how this term relates to the simulation of measuring distance._ In addition, it appears that LaBelle's reference to a gun at col. 3: 48-62 is to the configuration or shape

of the range finder and not that it is actually comprised as a component of the gun or other optical devices. LaBelle also states that the laser rangefinder may be mounted to a tripod or other moveable surface. A person of ordinary skill in the art reviewing the LaBelle patent would not be lead to combine Golubic and Richardson with LaBelle because LaBelle is unrelated to the simulation of firearms or archery.

Claim 11 in light of Golubic, Richardson and Hawkes (USPN 6,237,462)

As to Claim 11, which recites that the data capture unit includes a microphone for capturing audio data corresponding to the captured image and range-finding data, it is acknowledged that Golubic and Richardson do not explicitly disclose the use of a microphone for audio recording, but that Hawkes does. However, Hawkes is not properly combinable with Golubic and Richardson because the Hawkes' patent is based on the actual firing of a projectile versus the art of simulation. In addition, Hawkes is directed at unmanned use of the firearms where the present invention requires a person be in the presence of and in control of the simulation device. Hawkes' use of a directional microphone is applied for a different outcome – using audio to change positions and aim the unit, whereas the preferred embodiment of the present invention employs audio to provide a more realistic, simulated experience. A person of ordinary skill in the art reviewing Hawkes would not be inclined to combine its teachings with Golubic and Richardson since the directions and bents of these patents (real versus simulation) are so different.

Claim 13 in light of Golubic, Richardson and Sammut (US 2005/0021282)

Claim 13 recites the use of a clinometer for increasing shot accuracy by accounting for slope or tilt angle of the hunting instrument relative to the intended target.

It is acknowledged that Golubic and Richardson do not disclose these features (page 12 of Office Action), but alleged that Sammut does. However, Sammut is not properly combinable with Golubic and Richardson for the same reasons as mentioned in relation to the Hawkes patent (real versus simulation), above.

Claims 14-16 in light of Golubic, Richardson and Giry (USPN 5,675,112)

Claim 14 recites that the image data may be transmitted from the data capture unit to an electrical apparatus such as a computer or PDA (personal digital assistant). It is admitted that Golubic and Richardson fail to disclose this, but alleged that Giry does. However, Giry is not properly combinable with Golubic and Richardson for the same reasons as mentioned, above, as relates to Hawkes and Sammut. In addition, Giry's use of the data being transferred in a digitized format is for that of a much different use. For example, Giry uses the digitized data to "display" the crosshairs from the camera mounted to the gun in the viewer for the user for assistance in aiming. The instant invention uses the data sent to the computer for use to "edit" the data for viewing real-time or in the future. Further, this use of the data is broader than that of Giry in that the captured image is edited with more than the crosshairs.

Claim 15 recites that the flight path of the projectile and the impact point of the intended target may be viewed on the display screen without first having to download the image data to the computer. While it is alleged that Golubic discloses this, Golubic fails to disclose displaying the flight path of the simulated projectile. Accordingly, it would appear that Claim 15 should be allowable.

Claim 16 recites that the display screen is enabled to provide multi-shot displays corresponding to a plurality of projectiles. The ability of the instant invention to choose

and display different impact point images (see, e.g., FIGURES 6f and 6g) are significantly different than as disclosed in the cited prior art.

Claims 23, 26, 28, 35 and 36 in light of Swensen and Garthe (USPN 6,513,511)

It is acknowledged that the features of Claims 23, 26, 28, 35 and 36 are not disclosed by Swensen (page 14 of Office Action). However, it is found that Garthe discloses these features. Swensen discloses adding a laser transmitter to a bow and using a separate receiver to determine a given result. Swensen teaches this as a stand-alone process and does not disclose a method of making a bow safe to dry-fire. Garth covers the use of such a mechanism to aid in the draw of a bow to aid the user in loading the bow for release. By contrast, the present invention covers the release of the string with the assistance of resistance typically provided by an arrow, using completely different technology, as claimed. Further, Garthe is not properly combined with Swensen because the intended use of Garth's patent answers a problem not disclosed in the Swensen patent. Swensen's patent is further distanced from ours by the application of his technology. He uses a straight line laser beam to determine the impact on a target without the consideration of drop, wind or other factors that would cause the projectile to miss its intended target. Combining just these two patents would not result in the creation of the instant technology. Critical elements such as the image editing, trajectory calculations, etc. are missing from both cited patents. Additionally, Garth would not be combined with Swensen since the directions of these technologies (real versus simulation) are so different.

Further, as to Claim 28's recitation of machining the walls of the cavity to

substantially minimize rod flex and distortion, Garthe's disclosure that the invention is "rugged" (col. 1:43-47) is insufficient to disclose this claim limitation. Garth's use of this term appears to have been directed more toward the visual aesthetics of the product (e.g. finish) than the actual construction.

Claim 24 in light of Swensen, Garth and Nibecker (USPN 6,701,908)

As to Claim 24, which recites that "the displacement valve is adjustable from the outside of the momentum suppression rod to allow varying rates of rod release and back-pressure," it is acknowledged that Swensen and Garth fail to disclose this feature (pages 15-16 of the Office Action), but that Nibecker does. As noted above, it is not believed that the teachings of Swensen and Garth are properly combinable. Further, Nibecker's disclosure concerning its displacement valves applies to the actual use of the gun and not for the use of it in a simulated activity. Accordingly, the prior art combination fails to teach or suggest the obviousness of the invention recited in Claim 24.

Claims 29 and 30 in light of Swensen and Bergstrom (USPN 6,901,689)

Claim 29 recites a multistage piston, while Claim 30 depends from Claim 29, and recites inner and outer extension limiters for the piston, enabling the extension of progressive piston portions. It is acknowledged that Swensen fails to disclose these features (page 16 of Office Action). It is not believed that Bergstrom is properly combinable with Swensen as Bergstrom is not even drawn to the general problem solved by the present invention, since Bergstrom involves the actual use of a firearm and not that of its use in simulation. *See In re Dillon*, 892 F.2d 1554 (Fed. Cir. 1990), *vacated*, 919 F.3d 688 (prior art not directed to problem solved by invention is nonanalagous art which may not be used to support a rejection).

Claims 25 and 31 in light of Swensen, Golubic and Richardson

Various features of these claims are said to be disclosed by one of these three references, and the references are combined, without any showing of any motivation to combine them, with the impermissible benefit of hindsight to result in the claimed invention. Applicant respectfully suggests that this combination rejection is improper. A person of ordinary skill in the art would not have been lead to combine the teachings of Swensen and Richardson, which relate to bow and arrow applications, with Golubic, which relates to firearm applications because these technologies cannot be combined in a practical application to solve the same problem. The technology disclosed by Richardson requires that an object be passed through the camera and sensors to create the desired simulated outcome. In contrast, Swensen teaches the use of a laser beam transmitted from the bow in place of the arrow to determine impact spot. A laser beam of light would not be detectable by the cameras and sensors as noted Richardson and the desired outcome would not be possible. Further, the technology described in Richardson and Swensen requires that significant equipment be placed in an enclosed environment with care taken as to the level and placement and calibration of the equipment. The outdoor use as described by Golubic would not be possible employing the technologies of Swensen and Richardson due to the equipment being limited by inclement weather. In addition, the data capture process described in Richardson requires the use of multiple sensors and cameras as disclosed in FIGURE 3 of Richardson. This is not a practical alternative or addition to Golubic's described unit. For these reasons, it is submitted that these patents disclose technologies that teach away from a combination of them into an integrated unit, and would cause someone to be discouraged from attempting to combine

such technologies.

Additionally, as to Claim 31's recitation of a "momentum suppression rod include[ing] a charge coupled device camera, " while Golubic discloses a charged coupled device (CCD), it fails to teach combining the CCD with a momentum suppression rod (MSR). By combining the CCD with the MSR, problems of alignment, offsetting calculations, image re-alignment and position factoring are reduced or eliminated. This increases the accuracy of processed image and display thereof. Golubic fails to suggest this combination, and Swensen and Richardson wholly fail to remedy this significant deficiency.

Claim 32 in light of Swensen and Tann (USPN 4,316,145)

Claim 32 recites the use of proximity sensors in the cavity. Swensen fails to disclose this, as acknowledged (page 19 of Office Action), but Tan is said to teach this. However, Tann is unrelated to the field of simulated devices so it is believed to be nonanalagous art, improperly used in a combination rejection.

Claim 33 in light of Swensen, Tann and Adcock (USPON 6,718,962)

Claim 33 is dependent on Claim 32, and also recites a specific range of reaction time for the proximity sensors. It is acknowledged that Claim 33 is not disclosed by Swensen or Tann, but is believed to be found in Adcock. However, Adcock is not properly combinable as it is nonanalagous art, as it deals with actual bow and arrow hunting equipment, as opposed to simulated such equipment.

Claim 37 in light of Golubic and Eppenstein (USPN 2,040,171)

Claim 37 recites the use of an altimeter. Swensen is acknowledged not to disclose this, but it is found that Eppenstein does. Eppenstein is nonanalagous art, as it discloses

the use of a rangefinder on a ship and is related to determining the angle of the ship and the proximity of land masses, other ships, etc. Additionally, the instant patent application as claimed addresses vessel oscillation and determining such factors by use of references and measurements, but does not reference the use of an altimeter to determine those results.

Accordingly, Applicants respectfully request an allowance of pending Claims 1-39.

Respectfully submitted,

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